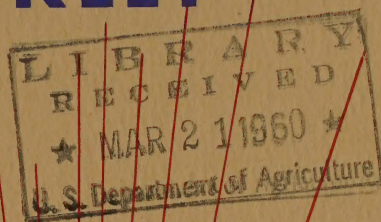


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YOUR

Information BOOKLET



● **SUDAN**

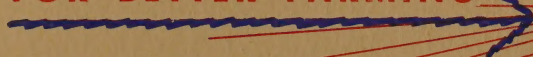
● **MILLET**

● **GRAIN SORGHUM**

● **FODDER CANE or SORGO**

● **HYBRID GRAIN SORGHUMS**

FOR BETTER FARMING



**ROYAL
QUALITY
SEEDS**

RUDY-PATRICK SEED CO.

KANSAS CITY, MO. • HUTCHINSON, KANS. • ST. JOSEPH, MO.

Published bulletins, pamphlets and circulars of State Agricultural Experiment Stations, and the United States Department of Agriculture, were used freely in preparation of this manual. For the information provided, a grateful acknowledgement is extended.

FOREWORD

The past few years we have found an increasing interest in planting of grain and forage sorghums, as well as Sudan, in our trade area. Many of the old, commonly used varieties of Sudan, grain and forage sorghums have been replaced by newer, better-producing types.

In response to this interest we have prepared this information booklet in which we have endeavored to cover the principal Sudan, grain and forage sorghums in use today. This compact information should answer the majority of questions that your farmer customers ask. Should your farmer customer desire more complete information — not covered in this booklet — we recommend that you advise him to see the local county agent. We have left additional space in the back of this booklet for you to add new information as it is made available. It will continue to be our policy to mail you from time to time Royal Quality News Bulletins concerning new developments or merchandising ideas.

We have at Hutchinson, Kansas, a complete, modern processing plant. The buying facilities of this modern plant reach all major production areas of Sudan, grain and forage sorghums. It is our constant endeavor to provide you with the finest quality forage seed that is available in any given season.

If you have additional questions concerning the subject matter, do not hesitate to call on us.

RUDY-PATRICK SEED COMPANY

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SUDAN GRASS
(*Sorghum vulgare*, Var. *Sudanense*)

Sudan Grass is the most widely used summer growing supplemental annual pasture crop now grown in the United States. Generally speaking, it is well adapted in all areas of our country, and is not particular in soil requirements.

**YOUR ADVANTAGES – WHAT
SUDAN GRASS DOES FOR YOU**

- An outstanding, mid-to-late summer temporary pasture crop which can be used for emergency hay or silage purposes.
 - The forage is palatable, juicy, and has a high feed value.
 - Its best feature is its ability to grow rapidly after planting in warm weather, and to recover rapidly after grazing or cutting.
 - Sudan Grass withstands considerable drouth and high temperatures, but grows best when soil moisture is plentiful and the weather warm.
 - Planting made in late May and early June will be ready for grazing in mid-July and will remain productive until frost.
 - With rotation grazing, a good stand may carry up to two or three head of mature livestock per acre.
 - Acts as an insurance crop. The seed is usually cheap and very easy to grow.
2. Do not graze until growth is 18 to 24 inches tall.
 3. Do not graze ruminants on young, tender growth or plants partially killed by frost.
 4. Rotate grazing, if possible, for maximum production.
 5. Do not permit excessively hungry cattle to graze.
 6. For hay or silage, cut during heading to soft dough stage.
 7. On medium to low fertility soils, some nitrogen and perhaps phosphorous may be needed for maximum production. (Have soil tested if any doubt.) Sudan Grass poisoning is generally not a problem if handled properly. Remember that ruminant animals (cattle, sheep and goats) are more liable to poisoning than non-ruminants (horses and hogs).

VARIETIES

Piper – An early strain rapid in growth and recovery developed in Wisconsin. Fairly disease resistant and lowest in prussic acid of any commercial variety. These features combined with good forage production make it one of the best strains for this area. Seed of Piper is a mixture of light and dark colors.

Greenleaf – A late, leafy variety developed in Kansas. Slightly slower in growth and recovery than Piper. Has good disease resistance, juicy stems, and sweet forage moderately low in prussic acid. Seeds are mahogany colored.

Common – From many of the early introductions, Common varieties of Sudan Grass were developed. All are remark-

**TIPS FOR YOUR
SUCCESSFUL MANAGEMENT**

1. Use good seed of varieties low in prussic acid content. Sow 20 to 25 pounds per acre.

ably similar in type, but there are some minor differences in strains originated in California, Kansas, and other states. The so-called Common varieties are extremely early and susceptible to diseases.

Wheeler — An old variety from Kansas which is early, dry stemmed and disease susceptible. Yields well and grows rapidly, but forage usually of low quality.

Sweet Sudan — Medium in maturity with juicy stems and sweet forage. Generally slow growing, and disease susceptible under wet conditions. Rather low yielding in pasture clipping tests. Seeds are sienna or orange-red in color.

Lahoma — A new variety from Oklahoma. It is slightly later than Greenleaf and has good disease resistance, leafiness, and palatability. Moderately low in prussic acid. Only limited information is available, but this variety is probably somewhat lower than Piper in forage yield due to lateness. Seeds sienna or orange-red in color.

Tift — Moderately late, leafy, disease resistant variety from Georgia. Only average in yield and slower in growth than Piper. Seeds are mixture of chocolate and tan colors.

SEEDING RATE

Sow 20 to 25 pounds per acre. When drilled in 14-inch rows, about 15 to 30 pounds of seed are required. When planted in 36- to 42-inch rows, 8 to 12 pounds of seed are required. A thick stand of Sudan is not necessary, because the plants tiller profusely when in thin stands.

RECOMMENDED VARIETIES BY STATES

Missouri

Recommended — Piper, Greenleaf, Sweet, Common, Wheeler.

Iowa

Recommended — Piper, Greenleaf, Sweet; Others — Wheeler, Common, Lahoma.

Kansas

Recommended — Piper, Greenleaf, Sweet, Common, Wheeler.

Oklahoma

Recommended — Lahoma, Greenleaf, Piper; Others — Sweet, Common, Wheeler.

Arkansas

Recommended — Piper, Greenleaf, Sweet, Common, Lahoma; Others — Wheeler.

Illinois

Recommended — Piper, Greenleaf, Sweet; Others — Common, Wheeler.



Grain Sorghums For Your Farm

FORAGE SORGHUM **(*Sorghum vulgare*)**

The name "Sorghum" refers to a large number of crops. It includes Broom Corn, Kafir, Milo, Sudan, the sweet forage Sorghum (incorrectly called Cane), and many others. Forage Sorghum is an annual, tall growing, coarse grass noted for its good drouth and high temperature tolerance. The sweet Sorghums (or Sorgos) are grown mainly for silage or fodder, but also may be used for stover, hay, pasture and soiling. The most efficient way to use forage is for silage, since the forage preserved this way is very palatable and nutritious. Under favorable conditions some Sorgos may yield up to 20 tons or more per acre for silage. Generally speaking, the green plants are not desirable for pasturing as you move northward because of the danger from prussic acid poisoning. One should check the county agent for results along these lines in his particular area. Several factors are important in growing Sorghums to best advantage for forage. Some management tips follow.

MANAGEMENT TIPS

1. Seed recommended varieties in your area in late May or early June for maximum production, though planting up to about July 15 is possible.
2. Treat seed with such compounds as Ceresan M, Panogen, Spergon, Arasan, etc., to insure good stands. Use high germinating, high purity seed.
3. Plant approximately 8 to 12 pounds per acre in wide cultivated

rows, or about 60 pounds per acre in solid drill seeding.

4. Control weeds the same as for Corn or Beans.
5. Harvest for silage when seed approaches hard dough stage to get maximum sugar content.
6. For fodder or bundle feed, grind, shred or chop dry forage to promote feeding efficiency.
7. Don't graze plants partly killed by drouth or frost. Don't graze young plants or new regrowth after cutting.
8. Fields killed by frost with no green regrowth can be pastured satisfactorily after combining for grain.
9. Machinery for planting Corn or Wheat can be adapted to planting Sorghum.
10. Time to plant. The time to plant Sorghums should be arranged so that germination of the seed will take place under warm conditions and so that early growth may develop during moderately hot weather. Blooming and seed setting should take place after extreme hot weather is past.

VARIETIES

Atlas Sorgo — This is a pedigree selection from a field cross between Sourless Sorgo and Black Hulled Kafir, found by I. N. Farr of Stockton, Kansas. This is a full-season, high-yielding, lodging-resistant variety. The seed is white with red-brown to black spots. Plants of Atlas grow to a height of from 7 to 10 feet and require from

120 to 130 days to mature. Atlas is an excellent crop, having the advantages of a sturdy, leafy stalk, abundantly juicy and sweet, with white, palatable grain. The stalks are stiff and do not lodge easily.

Black Amber or Early Amber – Selection from Chinese Amber about 1857. This Amber, as well as the other Amber varieties, is grown for green fodder, silage, and occasionally for hay throughout the southern half of the Corn Belt, and south, where it will out-yield Corn Fodder. Its climate and soil requirements are about the same as Sudan Grass. The seed is light brown in black, shiny hulls. Stalks are tender, juicy, sweet, with few leaves. Height is from 6 to 9 feet, and tillers freely. Matures 90 to 100 days. It is popular in the northern states, north of Kansas and Missouri because of the early maturity, but it yields much less than later varieties and volunteers badly.

Early Sumac – This variety matures early and is a red-seeded Sweet Sorghum, a selection out of standard Sumac. Plants grow from 5 to 7 feet tall and mature in about 100 days. Early Sumac is highly recommended as a Forage Sorghum of excellent quality.

Honey (Japanese Seeded Ribbon or Sprangle Top) – Probably imported from Africa around 1880. The seed is red-brown in a brown-red hull. Stalks are stout, juicy, sweet, and leafy. Height is from 7 to 10 feet, and tillers freely. It matures in about 125 days. This Sorghum is grown for syrup and silage, mainly in the south.

Kansas Orange – Kansas Orange grows to a height from 8 to 11 feet, and matures in 120 to 130 days. The stalks are juicy, sweet and leafy. The seed is reddish-yellow in color. Kansas Orange is grown extensively for forage and is a good Sorghum molasses variety.

Norkan – Norkan is a cross between Atlas Sorgho and Early Sumac, made at Kansas Station in Manhattan in 1926. The seed is white with black to brown spots. It has slender stalks that are juicy, sweet and leafy. The height is about 6 feet, and it tillers freely. It matures in about 110 days. Norkan makes a good crop in areas where Atlas will not mature. Stalks have characteristics of Early Sumac, but have good, sweet, palatable grain.

Leoti Red – Leoti Red is an attractive, sweet, juicy Forage Sorgho which grows 6 to 7 feet high and matures in about 110 days. The stalks are slender with open heads, and seeds are reddish-brown. Leoti Red is a good early Forage Sorghum.

Orange – Originally imported from Africa. Seed is yellow-brown with black or dark red hull. Stalks are mid-stout, juicy, sweet, mid-leafy. Height is from 6 to 8 feet, and it tillers freely. It matures in 115 days, and has proven to be a very good Cane.

Red Amber – Probably a cross of Orange and Black Amber around 1903. The seed is a light brown in a dark red hull. Stalks are tender, juicy, sweet, and mid-leafy. Height is from 6 to 8 feet, and tillers freely. Matures in 100 days. Red Amber usually yields more and better forage than Black Amber.

Rox Orange – This variety was developed and named at Wisconsin Agricultural Experiment Station. The seed is yellow-brown with bright red hull, somewhat rounded in shape. Hulls thresh free of seed. The stalks are mid-stout, and are juicy, sweet and leafy. Height is 6 to 8 feet; it tillers little. It matures in 110 days. Rox Orange is shorter and earlier than Kansas Orange. It gives very good forage tonnage yields of excellent quality and is a good Sorghum molasses variety.

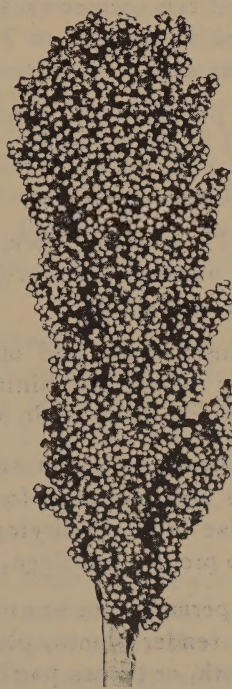
Sourless Orange (African Millet) – This was probably selected from an original Orange or Hybrid around 1900. It is a sweet, juicy, leafy, mid-stout stalk sweet forage. It attains heights of from 6 to 9 feet and tillers freely. It matures in approximately 115 days. The seed is a pale buff with yellow brown hull. It apparently retains juice and keeps sweet until spring.

Sumac (Red Top) – Probably imported from Natal Africa about 1857. The seed is small, dark reddish-brown, with black to red-brown hull. The stalks are mid-stout, juicy, sweet, and leafy. Height is from 6 to 8 feet, and tillers freely. It matures in 120 days.

Tracy – Tracy Sorgho resulted from a cross between Sumac, 6550, and White African, made by Quinby and Stevens at Chillicothe about 1930. No field ensilage harvesting equipment was available at that time, so Sorghums were bound and shocked for forage. The tall growing Tracy proved too much for shocking crews, and no interest in it as a commercial variety was the result. Today, with ensilage harvesting equipment, the storage is

different and much interest for Tracy has developed. Tracy matures in 121 days, shows an approximate increase in tonnage of 20% over Atlas, and points the way for farmers in the eastern half of Kansas, Missouri, and adjacent areas to step up yields by use of a later maturing variety.

Waconia Orange – Apparently the same as Rox Orange, but distributed by Waconia Sorghum Mills. In Iowa, the average yield of forage ton per acre has ranged from 15 to 20. As one goes south into Missouri and Kansas, yields increase to between 20 and 25 tons per acre. It matures in 120 days, has an average height of 8 feet. Syrup yield per acre averages 200 gallons; seed yield per acre averages 1,250 pounds. Total sugars over dried stalks, 44% to 53%.



Standard Blackhull Kafir

COMBINE GRAIN SORGHUMS

Interest in Grain Sorghum production has increased greatly in the past few years in our central states, since it is a warm weather crop and has tolerance to drouth and high temperatures. Sorghum Grain is used mostly for live-stock or poultry feed. The feeding value is similar or slightly below that of Corn. Feeding efficiency for cattle and hogs is best where the grain is ground or cracked first to prevent passing through the animal without being digested. Sheep and poultry apparently do well on the whole grain.

MANAGEMENT TIPS

1. Use high germinating, high purity seed of recommended variety in your area.
2. Sow in Corn with rows 1 to 1½ in. deep, at a rate of 4 to 7 pounds of seed per acre.
3. Delay planting until the soil has warmed to 70° Farenheit.
4. Control weeds same as with Corn.
5. Fertilize as for Corn, but avoid heavy amounts of nitrogen which may cause lodging.
6. Wait until heads and upper stems are dry before combining. Adjust combine carefully to do a good job.
7. Seed should be clean and down to 12% to 13% moisture for safe storage. Use artificial drying if necessary to prevent spoilage.
8. Don't permit livestock to graze young, tender plants, plants wilted by drouth, or plants partly killed by frost.

VARIETIES

Martin — A selection from Westland in Texas in 1937. Seed brown to red-brown and hard. The stalk is slender, dry, 11 to 12 leaves. Height is approximately 3 feet, tillers little. It matures in about 100 days. This is a good combine crop and fine yielder. Resistance to pythium disease. Grain less palatable than most Milos and quite hard.

Midland — Midland, an early combine type with seeds that are reddish-yellow in color, is the result of a cross between Pink Kafir and Dwarf Yellow Milos. It matures in 100 to 110 days. The seed is a medium size, and the grain, although somewhat red in color, will grade as Milo. The variety is completely resistant to Milo root-rot disease. Stalks of Midland are somewhat juicy and are relished by live-stock. Midland was released in Kansas in 1944. It reaches a height of approximately 30 to 40 inches.

Westland — Westland is a selection of Wheatland Milo, and was released in 1942. The seed is yellowish-red. Stalks are stout and dry. It has a height of approximately 3 feet, and tillers a little. It matures in 100 to 105 days. Westland is resistant to Milo disease, and has ability to produce a crop in infected soil where the later variety of Wheatland may almost be a complete failure. It is susceptible to injury by Chinch Bugs. Westland stands up exceptionally well, and is an excellent combine type and a good producer.

Plainsman — A cross between Kafir and Milo at Texas Station, and distributed in 1937. Plainsman has a high yield potential and produces a reddish-

yellow grain with good test weight. It matures in about 110 days, being slightly later than Westland and a week later than Midland. The variety is resistant to Milo disease. It has a height of 3 feet, and tillers a little. It stands well after maturity, and is a popular combine type Milo.

Redbine 60 – Developed in Texas, this variety has a reddish colored seed. It is 3 feet in height. It matures earlier than Martin, and has dry head, stems and rachis, long stem, less stalk and fewer leaves. It is an excellent producer and is gaining rapidly in popularity.

Combine Kafir 44-14 – Oklahoma Dwarf Kafir 44-14 was developed by the Oklahoma Experiment Station to meet a demand for a white seeded, Chinch Bug resistant, Combine Grain Sorghum. This variety grows somewhat taller than the Combine Milos, but is not as tall as most Kafirs. Stalks are strong, and the plant is resistant to Chinch Bugs. It is known to lodge severely under some circumstances. It has rather hard, white seed, and matures in about 115 days. The heads are semi-compact.

Norghum – Norghum is an early maturing variety from South Dakota. It has small red seeds, and tends to lodge if left standing too long after maturity. It yields well. Maturity is within 100 to 105 days. It is approximately 3 feet tall.

Reliance – This is an early maturing variety, slightly later than Norghum, and larger seeded. It has red seeds, which have more lodging resistance, but does not appear to yield as well

as Norghum. It matures in 100 to 105 days, and is approximately 3 feet tall.

Combine Hegari – Is a new variety, practically identical with the original Hegari, except that it is shorter and is adapted to combine harvesting. The Hegari hithertofore grown in the United States has been too tall for combining. Combine Hegari was developed by the Texas Agriculture Experimental Station in cooperation with the Midwest Research Institute and the Corn Products Refining Company.

GRAIN SORGHUMS (THAT ARE NOT THE COMBINE TYPE)

Hegari – The original seed was imported from Africa in 1908. Hegari seed is white with dark spots and brown undercoat. Stalks are mid-stout, mid-juicy, slightly sweet, and leafy. Height is from 4 to 5 feet; tillers freely. Hegari matures grain erratically from 105 to 115 days. This is a good grain producer, and a fine crop under favorable conditions, the fodder of which is very palatable. Resistant to kernal smut. In dry areas, it often fails to make grain, but will produce excellent fodder.

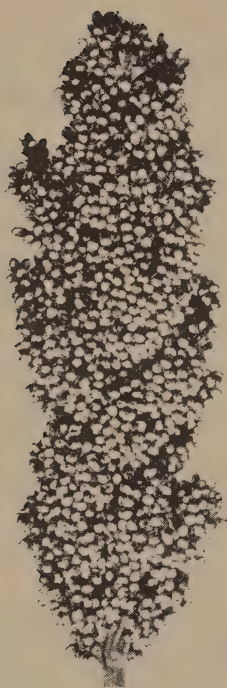
Early Hegari – This has many of the same characteristics as Hegari, except that it is about two weeks earlier in maturity. It is not as vigorous as Hegari, but is less erratic and more certain to produce grain. Has juicy, sweet, leafy stalks.

Blackhull Kafir – A new variety of interest, Blackhull Kafir, appeared in Kansas around 1895. The origin is unknown. The seed is white with red-brown to black spots and black hull.

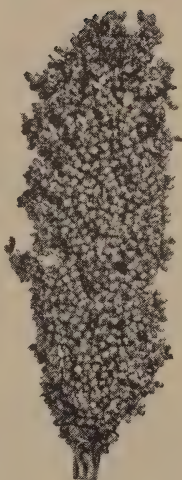
Always Buy Royal Quality Seeds

Stalks are stout, mid-juicy, not sweet, and leafy. Height is from 5 to 6 feet, and tillers a little. The grain matures in approximately 115 days. This

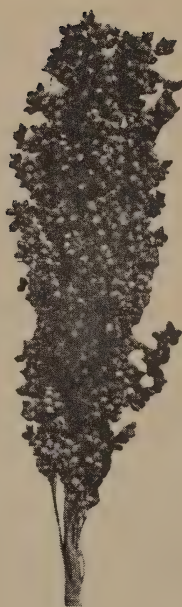
variety is very widely grown. The Kansas Certified Strain is an improved, juicy stalk selection.



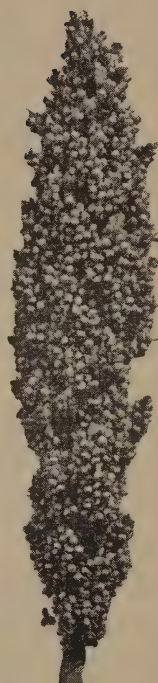
Atlas Sorgo



Early Sumac



Leoti Red



Norkan

SUMMARY

Variety	Use Grain or Forage or Both	Stalks	Approx. Days of Maturity	Ave. Hgt. In Feet	Harvest With B - Binder H - Header	Color of Grain	Tillers	Lodging
Forage Sorghums								
Atlas Soga	Both	Juicy-Sweet	125	7	Binder	White	Freely	Resistant
Black Amber	Forage	Juicy-Sweet	95	6	Binder	Brown	Freely	Susceptible
Early Sumac	Forage	Juicy-Sweet	100	5½-7	Binder	Red	Freely	Susceptible
Honey	Forage	Juicy-Sweet	125	7-10	Binder	Red-Brown	Freely	
Kansas Orange	Forage	Juicy-Sweet	120	8	Binder	Brown	Freely	Susceptible
Leoti Red	Forage	Juicy-Sweet	110	6-7	Binder	Reddish-Brown	Freely	Mid-Resistant
Norkan	Both	Juicy-Sweet	110	6	B or H	White	Freely	Resistant
Orange	Forage	Juicy-Sweet	115	6-8	Binder	Yellow-Brown	Freely	Susceptible
Red Amber	Forage	Juicy-Sweet	100	6-8	Binder	Light-Brown	Freely	Susceptible
Rox Orange	Forage	Juicy-Sweet	110	7	Binder	Red	Freely	Susceptible
Sourless Orange (African Millet)	Forage	Juicy-Sweet	115	6-9	Binder	Pole-Buffer	Freely	Susceptible
Sumac	Forage	Juicy-Sweet	120	7	Binder	Dark Red	Freely	Susceptible
Tracy								
Waconia Orange	Forage	Juicy-Sweet	110	7	Binder	Red	Freely	Susceptible
Combine Grain Sorghums								
Combine Kafir 44-14	Grain	Dry	115	3½	Combine	White	Some	Susceptible
Martin	Grain	Dry	100	3	Combine	Red-Brown	Some	Resistant
Midland	Grain	Mid-Juicy	95	3	Combine	Red	Some	Resistant
Norghum	Grain	Dry	100-105	3	Combine	Red	Some	Resistant
Plainsman	Grain	Dry	110	3	Combine	Red-Yellow	Little	Resistant
Redbine 60	Grain	Dry	95	3	Combine	Reddish	Some	Resistant
Grain Sorghums								
Hegari	Both	Mid-Juicy	110	5	B or H	White	Freely	Resistant
Early Hegari	Both	Mid-Juicy	95	5	B or H	White	Freely	Resistant
Blackhull Kafir	Both	Mid-Juicy	115	5	B or H	White	Some	Resistant

SOME ADAPTED SORGHUM VARIETIES BY REGIONS IN KANSAS		
REGIONS	GRAIN SORGHUMS	FORAGE SORGHUMS
Northwestern	Midland (southeast) Martin	Early Sumac Leoti Red Norkan
Southwestern	Westland Midland Martin	Early Sumac Leoti Red Norkan Atlas — Irrigation
North Central	Martin Midland — West Blackhull Kafir	Early Sumac Norkan Atlas Kansas Orange
South Central	Midland Westland Martin Blackhull Kafir	Atlas Kansas Orange Early Sumac Norkan
Northeastern	Blackhull Kafir Pink Blackhull	Atlas Kansas Orange Norkan
Southeastern	Blackhull Kafir	Atlas Kansas Orange

Greenleaf and Wheeler are the recommended sudangrass varieties for all of Kansas.

MILLETS

Millet is an annual, best adapted to areas with hot summers. They have a short growing season and are used as an emergency, or late-sown, catch crop. They are not too drouth tolerant, but may escape damage due to rapid growth and maturity.

YOUR ADVANTAGES – WHAT MILLET DOES FOR YOU

- Foxtail Millets have dense heads like weedy Foxtail grasses, and make a fair quality hay.
- Proso Millet has a spreading head like Oats, coarse, hairy plants, and gives a poor quality hay. Proso grain, when ground, is similar to Barley or Corn in feed value, and is eaten by all classes of livestock. It is used mostly in chicken and birdseed feed mixtures. Grain from Foxtail Millet is less palatable, about 83% of the feeding value of Corn.
- Some use is made of Millets as a cover crop in orchards.

TIPS FOR YOUR SUCCESSFUL MANAGEMENT

1. Millet should be sown in June or early July. The recommended rate of seeding with a grain drill is 20 to 40 pounds per acre.
2. Cut for hay when the heads first start to appear.

VARIETIES

Common or Golden Hay Type Millet (*Setaria italica*) – This is the earliest of the Foxtail Millets, ready to cut for

hay in 50 to 55 days and maturing seed in about 70 days under average conditions. It has many leaves and fine stems, making a hay of high quality. It does well on average soils and is adapted for planting throughout the north central states. The yield is slightly less than other varieties, averaging one to two tons per acre. Seed is straw yellow in color.

German Millet (*Setaria italica*) – Also called Golden Millet. Stems heavier, leaves broader and coarser than Common Millet. Requires a slightly longer and warmer growing season, and a mellow soil. The hay is of poorer quality but runs heavier, one and a half to two and a half tons per acre. German Millet is ready to cut in about 65 days and matures seed in 85 to 90 days. Seeds are yellow and slightly smaller than Common Millet. The most popular variety in the south central states and southern portions of the Corn Belt. (Note: Certified German Millet seed is the only true variety recognized because of the tremendous intermingling of yellow seeded varieties.)

Proso Millet (*Panicum miliaceum*) – Proso Millet has a spreading head like Oats, and is a coarse, hairy plant. It gives a poor quality hay. Proso grain, when ground, is similar to Barley or Corn in feed value and is eaten by all classes of livestock. This is used mostly in chicken and birdseed feed mixtures.

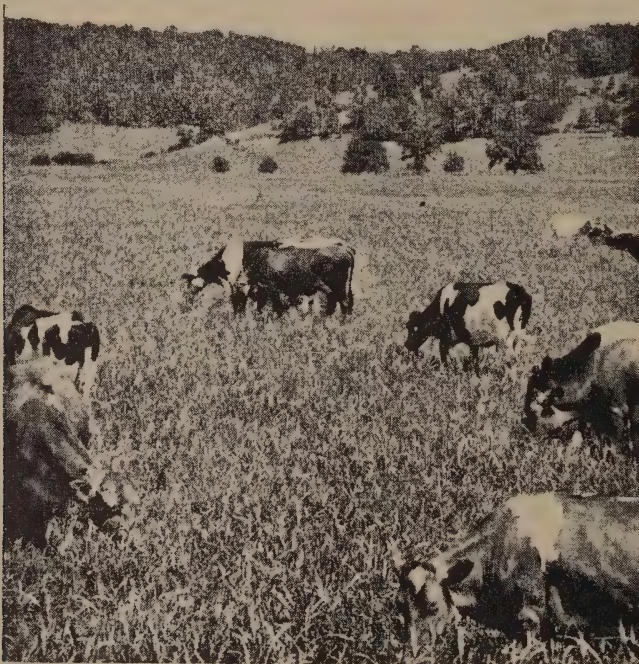
Starr (Southern) Millet (*Pennisetum glaucum* – var. *synthetic*) – Starr is a new synthetic variety of Cattail or Pearl Millet developed to obtain a superior summer forage plant of multiple use. It is not a member of the

Sorghum group. It is an annual, free-tillering, warm weather grass, highly palatable, outstanding in feed values and productivity, and non-toxic at any stage of growth. The ratio of leaf to stalk is high, yielding a higher percentage of basic feed values than less leafy forage crops. It will attain a mature height of 6 to 8 feet, depending on growing conditions, and will stand well in the field under most adverse conditions.

Cultural experience recommends planting Starr Millet in a row or on a bed that will permit one to two cultivations, depending on early growing conditions. If a chemical fertilizer is used, side-dressing with the first cultivation appears to be the best means of utilizing nitrogen. Adequate nitrogen to maintain good growing conditions is necessary to get maximum production

on this extremely leafy plant. Under irrigation, where seed bed is pre-irrigated, seed may be placed to a depth of $1\frac{1}{2}$ to 2 inches, under mulch, safely. If planted on a bed and irrigated up, or where seed must be germinated by sprinkler system or rainfall, place seed $\frac{1}{4}$ to $\frac{1}{2}$ inch below surface and do not allow soil to crust before emergence.

For forage production on a 32 to 42 inch row width, a planting rate of 6 to 10 pounds per acre of seed germinating 85% or better is recommended. If Starr Millet is broadcasted or drilled with a grass or grain drill, it would require 17 to 20 pounds of 85% germination seed to provide the same plant population as 40 pounds of the same quality Sudan Seed. Daytime soil temperatures should reach 70° Farenheit or better before planting.



Sudan Grass Pasture

HYBRID GRAIN SORGHUM

The potential value of sorghum hybrids in increasing grain and forage production has long been recognized by breeders, but the realization of this potential was delayed for many years by the sorghum plant itself. Each sorghum flower – and there are from 2,000 to 3,000 on each head – is a complete flower with both male and female parts. There was no simple procedure, like removing the male flowers by detasseling in corn, which would make the plants female and make possible complete cross-pollination or hybridization. The problem of hybrid seed production was attacked by attempting to use chemicals, heat, light and hormones to inhibit the development of male parts of the flower, but the only practical method found was the genetic control of pollen production. The present practical and very simple system for seed production was developed in 1952, following research on genetic control of male flowers since 1929.

The first year or two in commercial production (as in anything new) we are going to encounter some undesirable characteristics. The many fine research men working on the hybrid grain sorghum will in a short time eliminate these undesirable factors in their research program. Just as in hybrid corn they will continue to make improvement. The ultimate advantages in hybrid grain sorghum are listed below:

Higher Yielding – Tests have proven to date that Hybrids yield 20% to 50% over other comparable varieties.

Superior Seedling Vigor – This is due to their rapid growth.

More Tolerant to Drought

Excellent Grain Quality

Combine Harvesting

Uniform Height and Maturity

Pre-Tested Seed – That is actually grown to ensure each lot's performance.

Dry-Headed Plants – That eliminates as much as possible the moisture problem at harvest time.

MANAGEMENT AND CULTURAL RECOMMENDATIONS THAT ARE AVAILABLE AT THIS TIME

Sorghum hybrids require the same production practices as sorghum varieties. Larger seed size may require higher planting rates, and higher seedling vigor and survival may result in better stands and faster growth.

ROTATIONS for sorghum are difficult to set up because of hazardous conditions and moisture limitations. Sorghum usually follows sorghum, cotton or wheat, but does better following a legume or fallow.

LAND PREPARATION is the same as for other grain sorghums.

FERTILIZATION of grain sorghum will increase yields in some areas. County agents have local recommendations – or fertilize the same as corn.

SEEDING – Plant ROYAL BRAND Hybrids that are –

- adapted to your needs – See remarks concerning the various variety numbers.
- Plant adequate rates – about 1½

pounds per acre for each 1,000 pounds expected grain yield is a good rate for average planting conditions. This is about 4 or 5 pounds per acre. Under cost conditions today, you will plant an acre of hybrid sorghum for approximately \$1.00 per acre.

TIME TO PLANT – The same as other Sorghums. June planting on high plains, and early spring planting elsewhere, is usually best.

- Warm, moist soil is necessary for good germination. Cover seed 1 – 2 inches.

CULTIVATE for weed control only in moist areas. Late planting in narrow rows may sometimes be grown without cultivation.

IRRIGATION will usually pay if other factors are favorable for high yield. Greatest water use is from preboot to 30 days after blooming.

HARVEST when the grain has dried to 12% moisture, or dry artificially. Cracking lowers grades and adds to storage problems.

SEED TREATMENT is applied to all seed to improve stands and control seed-borne diseases.

ROYAL BRAND HYBRID GRAIN SORGHUMS

R-10 R-10 is an early hybrid with approximate maturity date around 80-85 days. It is a combined type with good exsertion. The large seeds are brownish red.

R-10 has shown good yield increases of 20% to 30% above other

similar varieties of comparable material.

R-10 performs well on dry land, has a dense seed and a dry head.

R-12 R-12 has shown good increases in yield over such varieties as Westland and Martin. R-12 performs well in moderate rainfall regions or with moderate irrigation. Has a maturity date of approximately 95 days. R-12 has excellent standing characteristics and good combining characteristics. The exsertion of the head above the flag leaf is good and the grain is reddish in color. Has been grown under the most extreme isolation of over 60 miles in prevailing winds.

590 A CERTIFIED TEXAS HYBRID GRAIN SORGHUM

590 is an early hybrid which is of about the same maturity as Combine 7078 and Redbine "60" (approximately 90 days). It has excellent combining characteristics, with excellent exsertion of the heads above the flag leaf. The large seeds are light red.

590 has shown good yield increases over Combine 7078, Redbine "60" and Martin. 590 performs well on dryland – Is Early Maturing, Allowing Late Planting.

Texas 611 A CERTIFIED TEXAS HYBRID GRAIN SORGHUM

611 is a medium-early hybrid, maturing usually between Redbine "60" and Martin Milo (approximately 95 to 100 days). 611 has excellent combine height and is dry headed. The exsertion of the head above the flag leaf is good to excellent, and the grain color is light red. This variety has a better standing ability than other numbers,

and is Kafir-like in its reaction to dry conditions.

611 has shown good increases in yield over such varieties as Redbine "60", Combine Kafir "60" and Martin. 611 performs on good dryland, or with moderate irrigation system.

yield over Martin and earlier varieties.

It was the highest yielding hybrid in a uniform series of Experiment Station tests grown at 22 locations in nine states in 1955. 620 performs well on good dryland, or with moderate to medium irrigation.

**TEXAS 620 A CERTIFIED TEXAS
HYBRID GRAIN SORGHUM**

620 is a medium maturing hybrid of about the same maturity as Martin (100 days). 620 has excellent combining characteristics which have made Martin so popular. It is dry headed and is of uniform combine height. The grain color is light red, and the exsertion of the head above the flag leaf is excellent.

620 has given good increases in

**RS 650 A CERTIFIED TEXAS
HYBRID GRAIN SORGHUM**

650 is a medium maturing hybrid (full season, 110 days). It is semi-dry headed and has fair exsertion. 650 is of combine height, has medium soft, light red grain, and has given good increases in yield over Martin and earlier varieties. Performs well on very good dryland or with good irrigation.



Field Picture of Hybrid Grain Sorghum

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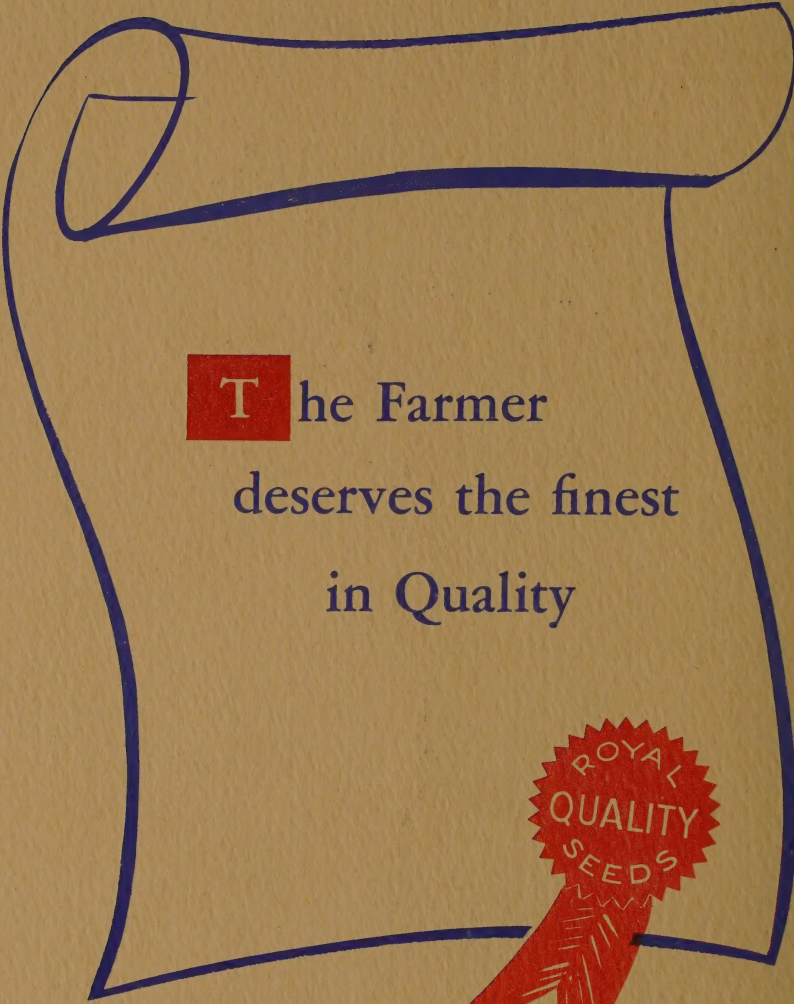
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